

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Currently Amended) A method for under-pressure carburizing of at least one steel workpiece in a vacuum furnace chamber comprising:

introducing a charge comprised of at least one steel workpiece into the vacuum furnace chamber;

preheating the charge and, when the temperature of the charge reaches ~~at least~~ 400 °C,
introducing an active nitrogen carrier into the vacuum furnace chamber;

continuing the introducing of the active nitrogen carrier and the preheating until the temperature of the charge reaches a carburizing temperature and the pressure in the vacuum furnace chamber is at 1 to 500 mbar, and when the charge reaches the carburizing temperature, stopping the introducing of the active nitrogen carrier and starting the introducing of a carbon carrier into the vacuum furnace chamber; and

effecting the carburizing of the at least one steel workpiece.

3. (Previously Presented) The method of claim 2, wherein the active nitrogen carrier is introduced to the furnace chamber in a continuous or pulse manner.

4. (Previously Presented) The method of claim 2, wherein the active nitrogen carrier is ammonia.

5. (Previously Presented) The method of claim 2, wherein the carbon carrier comprises a mixture of acetylene and ethylene.

6. (Previously Presented) The method of claim 2, wherein the carburizing temperature is at least 950 °C.